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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,511	11/11/2002	Guillaume Laffont	215653US2PCT	6844
22850	7590	10/19/2005	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			STAFIRA, MICHAEL PATRICK	
			ART UNIT	PAPER NUMBER
			2877	

DATE MAILED: 10/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b> 09/926,511	<b>Applicant(s)</b> LAFFONT ET AL.	
	<b>Examiner</b> Michael P. Stafira	<b>Art Unit</b> 2877	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on amendment filed July 25, 2005.
- 2a) ☒ This action is **FINAL**.      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 12-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 12-18 and 20-22 is/are rejected.
- 7) ☒ Claim(s) 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

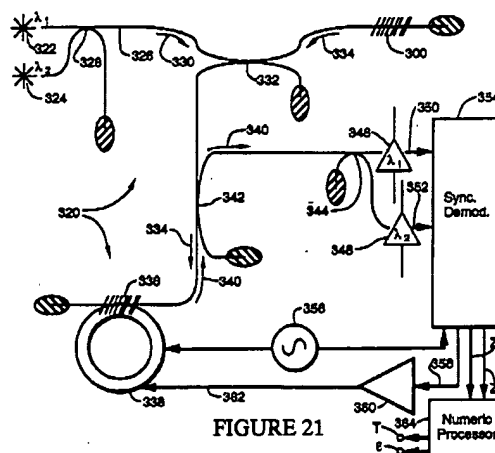
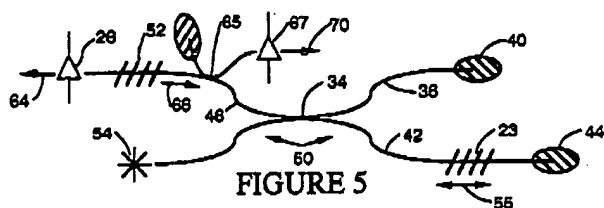
2. Claims 12-18, 20, 21 are rejected under 35 U.S.C. 102(b) as being anticipated by Udd et al. ('995).

#### **Claim 12**

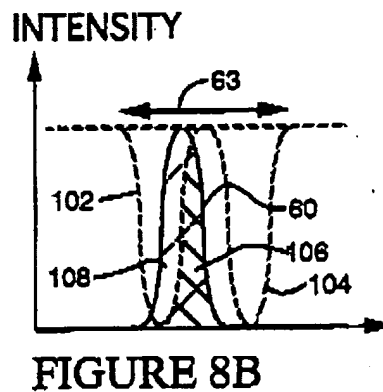
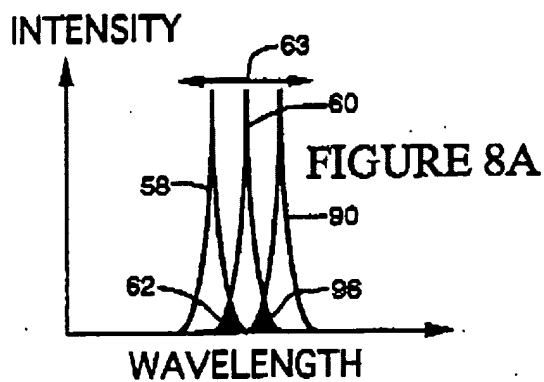
Udd et al. ('995) discloses a waveguide (Fig. 5, Ref. 42) comprising at least one transducer formed by a blazed Bragg grating (Fig. 5, Ref. 23), in the part of the waveguide (Fig. 5, Ref. 42) brought into contact with the medium (Fig. 5, Ref. 55), the spectral response of the blazed Bragg grating depends on the refractive index of the medium by means of energy coupling between the guided mode and cladding modes and/or a continuum of radiative modes, a light source (Fig. 5, Ref. 54) optically coupled to the waveguide (See Fig. 5) in order to direct this light therein and to make it interact with the transducer (Fig. 5, Ref. 23), spectral analysis means (Fig. 5, Ref. 26) provided to analyze the light which has interacted with the blazed Bragg grating and to provide a spectrum corresponding to this transducer (Fig. 5, Ref. 23), acquisition means (Fig. 21, Ref. 364) provided to recover this spectrum, and electronic processing means (Computer calculations, Col. 11-12, lines 63-17) provided to correlate, from the spectrum thus

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recovered, the spectral response of the blazed Bragg grating with a value of the refractive index of the medium and to provide this value.

**Claim 13**

Udd et al. ('995) discloses an electronic processing means are provided in order to determine the lower and upper envelope curves of the normalized spectrum and the normalized area between these two curves (Col. 7, lines 35-65).

**Claim 14**

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Udd et al. ('995) further discloses the waveguide comprises a single blazed Bragg grating (Fig. 5, Ref. 23). (It is the examiner position that the angled lines of grating 23 are the industry standard for indicating a blazed Bragg grating.)

**Claim 15**

Udd et al. ('995) discloses waveguide comprises a plurality of blazed Bragg gratings (Fig. 5, Ref. 23, 52), the spectral analysis means (Fig. 5, Ref. 26) are provided in order to analyze the light which has interacted with the gratings (Fig. 5, Ref. 23, 52) and to provide the spectra corresponding respectively to these gratings (See Fig. 8A, 8B), the acquisition means (Fig. 21, Ref. 364) are provided in order to demultiplex, in an optical manner, the spectra thus provided and to discriminate the respective spectral responses of the gratings (Fig. 5, Ref. 23, 52) and the electronic processing means are provided in order to correlate the spectral response of each grating (Fig. 5, Ref. 23, 52) with the value of the refractive index of the medium corresponding to this grating (Fig. 5, Ref. 23, 52).

**Claim 16**

Udd et al. ('995) further discloses the light source is a broad spectrum source (Col. 6, line 22).

**Claim 17**

Udd et al. ('995) further discloses the light source (Fig. 5, Ref. 54) is a narrow spectrum source (Col. 8, lines 53-65), the wavelength of which can be tuned, and the spectral analysis means comprise a photodetector (Fig. 5, Ref. 26).

**Claim 18**

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Udd et al. ('995) further discloses the light source (Fig. 5, Ref. 54) is optically coupled to a first end of the waveguide (Fig. 5, Ref. 42) and the spectral analysis means (Fig. 5, Ref. 26) are optically coupled to a second end of this waveguide (Fig. 5, Ref. 46), for the purpose of measuring the refractive index by transmission.

**Claim 20**

Udd et al. ('995) discloses spectral analysis means are provided in order to acquire each spectrum, with as small a wavelength pitch as allowed by the analysis technique (See Fig. 8A-8B).

**Claim 21**

Udd et al. ('995) discloses the waveguide is an optical fiber (Col. 5, line 46).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Udd et al. ('995).

**Claim 22**

Udd et al. ('995) discloses the claimed invention except for the waveguide is a planer waveguide. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine Udd et al. ('995) with the planer waveguide since it was well

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known in the art that planer waveguides provide a rigid support, therefore allowing the planer waveguide to be its own support.

***Allowable Subject Matter***

5. Claim 19 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Response to Arguments***

6. Applicant's arguments filed July 25, 2005 have been fully considered but they are not persuasive.

On page 7 of the Remarks/Arguments applicants take the position that the reference of Udd et al. fails to disclose a "blazed Bragg grating" as now claimed in independent claim 12 and that the reference fails to teach each of the claimed features. The examiner takes the position that in figure 5, Ref. 23 of Udd et al. it clearly shows a fiber blazed Bragg grating. It is further the position of the examiner that the slanted lines of grating 23 is the industry standard for indicating a blazed Bragg grating which is supported by the cited reference of Byron (5,638,473). In the reference of Byron is shows evidence that in figure 6 that elements 3 and 4 are blazed Bragg grating and that element 5 is a regular Bragg grating. Therefore, the reference of Udd et al. clearly discloses all of the claimed features and the rejection stands as indicated in the above paragraphs.

On pages 7-8 of the Remarks/Arguments applicants take the position that the rejection of claim 22 under 35 U.S.C. 103(a) does not cure the deficiency of the rejection of claim 12 and the taking of the official notice are traversed. Examiner takes the position of official notice since it is well known to use either a fiber waveguide or a planar waveguide and the evidence is shown in the cited reference of Strasser et al. (6,427,041) in column 6, lines 60-67 which discloses the use of tilted gratings in a planar optical waveguide. Therefore, it would be obvious to one skilled in the art at the time of the invention to use a planar waveguide.

#### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

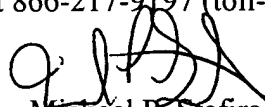


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael P. Stafira whose telephone number is 571-272-2430. The examiner can normally be reached on 4/10 Schedule Mon.-Thurs..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Toatley can be reached on 571-272-2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Michael P. Stafira  
Primary Examiner  
Art Unit 2877

October 5, 2005